UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,769	01/25/2001	Avishai Keren	14531.107.1.1	7768

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ART UNIT	PAPER NUMBER
2614	

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Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)
		09/770,769	KEREN ET AL.
Office Action Summary		Examiner	Art Unit
		Michael R Shannon	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _25 January 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-35_ is/are pending in the application.

4a) Of the above claim(s) _1-16 and 33-35_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _17-32_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _25 January 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _20010312_.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

1.   Restriction to one of the following inventions is required under 35 U.S.C. 121:

    I.   Claims 1-16, drawn to method of remote computer access, classified in

        class 725, subclass 78.

    II.   Claims 17-32, drawn to a display generator server for multiple access

        devices, each access device being able to access a different running

        program simultaneously, classified in class 725, subclass 36.

    III.   Claims 33-35, drawn to a virtual display and virtual audio creation at the

        server, classified in class 725, subclass 114.

The inventions are distinct, each from the other because of the following reasons:

2.   Inventions I and II are related as subcombinations disclosed as usable together
in a single combination. The subcombinations are distinct from each other if they are
shown to be separately usable. In the instant case, invention II has separate utility such
as the ability to run multiple programs on a server computer while providing access to
the plurality of programs to a plurality of end-users simultaneously without any direct
relation to the ability for a system to allow access to a single program running at the
server computer. See MPEP § 806.05(d).

3.   Inventions I and III are related as subcombinations disclosed as usable together
in a single combination. The subcombinations are distinct from each other if they are
shown to be separately usable. In the instant case, invention III has separate utility
such as the ability to create and virtually synthesize video and audio output at the server
end, with no direct correlation to the ability for a system to remotely access a computer
server and the programs running on it. See MPEP § 806.05(d).

4.   Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as the ability to create and virtually synthesize video and audio output at the server end, with no direct correlation to the ability to run multiple programs on a server computer while providing access to the plurality of programs to a plurality of end-users simultaneously. See MPEP § 806.05(d).

5.   Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6.   Because these inventions are distinct for the reasons given above and the search required for one group is not required for another, restriction for examination purposes as indicated is proper.

7.   Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

8.   During a telephone conversation with Eric Kamerath on January 19, 2005 a provisional election was made without traverse to prosecute the invention of II, claims 17-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-16 and 33-35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

DETAILED ACTION

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 17-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Williams (US 6,202,211), cited by examiner, in view of Richardson et al (VNC), cited by

examiner.

Regarding claim 17, the claimed remote computing server system is met as

follows:

- The claimed server, executing a plurality of programs, each of which

  generates a set of display commands is met by Williams, wherein he

  teaches a server, which maintains multiple active desktops and

  applications for display at remotely located STB/TV combinations [col. 3,

  lines 31-46].

- The claimed video compressor which receives the plurality of sets of

  display commands and generates a compressed video stream from each

  one of the sets is not specifically disclosed in Williams, though the fact that

  the video information is multiplexed for delivery [col. 7, lines 13-19] would

  lead one to incorporate the compression teachings of the Richardson

  document. Richardson discloses Virtual Network Computing, which

transmits compressed video images to a client. The compression is discussed with regards to the MPEG standard [page 35, **A Single Graphics Primitive**] for compressing and encoding before transmission. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a compressor to compress the video streams before transmission to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 18, the claimed mixing box that multiplexes the video streams onto a cable transmission network is met by Williams, wherein he discloses a cable bus topology with modulated signals by a modulator/mixer [col. 6, line 60 – col. 7, line 19].

Regarding claim 19, Williams does not specifically disclose the claimed mixing box that multiplexes the video streams onto a satellite transmission network. Williams does, however, disclose the aforementioned cable bus topology and cable transmission network. The examiner gives Official Notice that it is notoriously well known in the art to use satellite transmission networks in place of cable transmission networks, and submits that it would have been clearly obvious to one of ordinary skill in the art at the time of the invention to implement the Williams reference accordingly in order to utilize a satellite transmission network.

Regarding claim 20, the claimed method of video transmission is met as follows:

- The claimed step of executing, at a server computer, a plurality of programs, each of the programs generating a display responsive to an

Internet connection is met by Williams, wherein he teaches a server, which maintains multiple active desktops and applications for display at remotely located STB/TV combinations [col. 3, lines 31-46]. Williams also teaches that the Internet or other communication network can be connected to the server for interaction therewith [col. 5, lines 38-45 and col. 6, lines 8-19].

- The claimed step of transmitting each of the displays to a different remote location, wherein the displays are transmitted as compressed video streams is not specifically disclosed in Williams, though the fact that the video information is multiplexed for delivery [col. 7, lines 13-19] would lead one to incorporate the compression teachings of the Richardson document. Richardson discloses Virtual Network Computing, which transmits compressed video images to a client. The compression is discussed with regards to the MPEG standard [page 35, **A Single Graphics Primitive**] for compressing and encoding before transmission.

It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 21, the claimed programs being connected to a different Internet address is met by the discussion of the server maintaining one or more processes for each desktop being rendered at the server [col. 3, lines 60-62]. The Williams reference

also discloses that the Internet or other communication network can be connected to the
server for interaction therewith [col. 5, lines 38-45 and col. 6, lines 8-19]. The teachings
of the processes being executed (as is often done on normal desktop computers) at the
server and the Internet connection lead one to realize a process/program which utilizes
the Internet connection and can browse to different Internet addresses.

Regarding claim 22, the claimed programs generating a set of display
commands, wherein the compressed video streams are directly generated from the sets
of display commands is met by Williams' teaching of the desktops and display
information being sent to a personal buffer for transmission and display at the STB/TV
combination device [col. 3, lines 40-46]. While Williams does not teach the use of
compressed video streams upon transmission, the Richardson reference discloses the
use of the MPEG standard [page 35, **A Single Graphics Primitive** Section] for
compressing and encoding before transmission. It would have been obvious to one of
ordinary skill in the art at the time of the invention to transmit compressed video streams
to the client, in order to allow for more efficient bandwidth usage, while, at the same
time, complying with compression standards for transmission.

Regarding claim 23, the Williams and Richardson et al references disclose all of
that which is discussed above with regards to claim 22. Williams does not disclose that
the video streams are compressed responsive to known visual limitations at the remote
location. Richardson, however, discloses a system that allows various encoding
schemes in order to trade off parameters to compensate for client drawing speed (or
visual limitations at the remote, client location) [page 35, **A Single Graphics Primitive**

Section]. It would have been obvious to one of ordinary skill in the art at the time of the

invention to compress the video streams responsive to known visual limitations, in order

to allow the system to adjust to varying degrees of processing power and limitations on

the server and client, in an attempt to make the system more universal.

Regarding claim 24, the Williams and Richardson et al references disclose all of

that which is discussed above with regards to claim 22. Williams does not disclose that

the video streams are compressed responsive to bandwidth limitations on the

transmission. Richardson, however, discloses a system that allows various encoding

schemes in order to trade off parameters to compensate for bandwidth limitations [page

35, **A Single Graphics Primitive** Section]. It would have been obvious to one of

ordinary skill in the art at the time of the invention to compress the video streams

responsive to bandwidth limitations, in order to allow the system to adjust to varying

degrees of processing power and limitations on the server, client, and transmission

capabilities, in an attempt to make the system more universal.

Regarding claim 25, the Williams and Richardson et al references disclose all of

that which is discussed above with regards to claim 22. Williams does not disclose that

the display commands are degraded in response to bandwidth limitations on the

transmission. Richardson, however, discloses a system that allows various encoding

schemes in order to trade off parameters to compensate for bandwidth limitations [page

35, **A Single Graphics Primitive** Section]. It would have been obvious to one of

ordinary skill in the art at the time of the invention to degrade the video streams

responsive to bandwidth limitations, in order to allow the system to adjust to varying

degrees of processing power and limitations on the server, client, and transmission

capabilities, in an attempt to make the system more universal.

Regarding claim 26, the claimed multi-headed display generator is met as

follows:

- The claimed at least one CPU running at least one program, each of the

  programs generating at least one set of display commands, wherein the

  programs generate in totality at least two sets of content independent

  display commands is met by Williams, wherein he teaches that each user

  desktop (stored and executed at the server) is rendered and updated in its

  own, dedicated frame buffer before transmission of the video data (taken

  from the frame buffer) to the user STB/TV combination [col. 3, lines 40-

  46]. The CPU is diagrammed as item 31 in Figure 3.

- The claimed at least one compressor, which converts the two sets of

  display commands into two simultaneous compressed video streams is

  not met by the Williams reference, because it does not teach compression

  of the video data before transmission. The Richardson reference teaches

  compression using the MPEG protocol before the data is transmitted to

  the client [page 35, **A Single Graphics Primitive** Section].

- The claimed compression of the sets utilizing at least one shared resource

  of the generator is taught by the Williams reference. While the Williams

  reference does not teach the compression aspect (see the

  aforementioned MPEG protocol mentioned in the Richardson reference), it

does teach that the video buffers and rendering take place using one CPU (the one shared resource for all of the desktops and applications to be rendered and transmitted) [col. 5, lines 15-27].

It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Regarding claim 27, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference further discloses that the shared resource is a CPU [col. 5, lines 15-27].

Regarding claim 28, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference further discloses that the shared resource is a memory resource [col. 5, lines 15-27].

Regarding claim 29, the Williams and Richardson references teach all of that which is discussed above with regards to claim 26. The Williams reference does not disclose that the generator trades off the compression of one set of display commands with the compression of a second set of display commands. The Richardson reference teaches trading off parameters within the system, in order to accomplish multiple desktops (as taught by Williams) [page 35, **A Single Graphics Primitive** Section]. It would have been obvious to one of ordinary skill in the art at the time of the invention to trade off the compression of the multiple applications and display commands, in order to

keep the system continually running and to transmit video data to users in an efficient and timely manner.

Regarding claim 30, the Williams and Richardson references teach all of that which is discussed above with regards to claim 29. The Williams reference does not disclose that the trade off comprises trading off quality between the two command sets. The Richardson reference teaches trading off parameters (such as client drawing speed or quality based on encoding scheme) within the system, in order to accomplish multiple desktops (as taught by Williams) [page 35, **A Single Graphics Primitive** and **Adaptive Update** Sections]. It would have been obvious to one of ordinary skill in the art at the time of the invention to trade off quality between two command sets, in order to keep the system continually running and to transmit video data to users in an efficient and timely manner.

Regarding claim 31, the Williams and Richardson references teach all of that which is discussed above with regards to claim 29. The Williams reference does not disclose that the trade off comprises trading off frame rate between the two command sets. The Richardson reference teaches adaptive updating, or adapting the frame rate in order to account for faster or slower client system, in order to accomplish multiple desktop transmissions simultaneously (as taught by Williams) [page 35, **A Single Graphics Primitive** and **Adaptive Update** Sections]. It would have been obvious to one of ordinary skill in the art at the time of the invention to trade off frame rate between two command sets, in order to keep the system continually running and to transmit video data to users in an efficient and timely manner.

Regarding claim 32, the Williams and Richardton references teach all of that which is discussed above with regards to claim 26. The Williams reference meets the claimed step of multiplexing the compressed video streams onto a single transmission bandwidth. The discussion of the video data being modulated and transmitted onto the video bus meets the claimed multiplexing capabilities [col. 7, lines 13-19]. Williams does not teach the fact that the video signals are compressed. The Richardson reference teaches that the video is compressed before transmission [page 35, **A Single Graphics Primitive** Section]. It would have been obvious to one of ordinary skill in the art at the time of the invention to transmit compressed video streams to the client, in order to allow for more efficient bandwidth usage, while, at the same time, complying with compression standards for transmission.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rosenblatt et al (US 6,263,363) discloses a virtual copy of a users home computer being accessible and usable at the server computer.

Freadman (US 5,722,041) discloses a home entertainment center, which uses a PCI bus to multiplex television and other in-home materials to users throughout the home.

Anderson et al (US 6,633,905) discloses using a server for remote access to personal computer operation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael R Shannon whose telephone number is 703-305-6955. The examiner can normally be reached on M-F 7:30-5:00, alternate Friday's off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on 703-305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael R Shannon
Examiner
Art Unit 2614

Michael R Shannon
January 25, 2005

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